

HF32FA

SUBMINIATURE INTERMEDIATE POWER RELAY



File No.:E134517



File No.:40006182



File No.:CQC17002175721



Features

- 5A switching capability
- Creepage/clearance distance>8mm
- 5kV dielectric strength (between coil and contacts)
- 1 Form A meets VDE 0700, 0631 reinforce insulation
- 1 Form C meets VDE 0631 reinforce insulation
- UL insulation system: Class F
- Product in accordance to IEC 60335-1 available

CONTACT DATA

| | | |
|----------------------------------|--|-----------------------|
| Contact arrangement | 1A, 1C | |
| Contact resistance ¹⁾ | 70mΩ max.(at 1A 6VDC) | |
| Contact material | AgNi | |
| Contact rating (Res. Load) | 1A | 1C |
| | Standard/Sensitive | Standard |
| | 5A 250VAC 5A 30VDC | 3A 250VAC 3A 30VDC |
| Max. switching voltage | 250VAC / 30VDC | |
| Max. switching current | 5A | |
| Max. switching power | 1250VA / 150W | |
| Mechanical endurance | 1 x 10 ⁶ OPS | |
| Electrical endurance | H type: 1 x 10 ⁵ OPS (5A 250VAC, Resistive load, Room temp., 1.5s on 1.5s off) | |
| | Z type: 1 x 10 ⁵ OPS (NO/NC, 3A 250VAC, Resistive load, Room temp., 1.5s on 1.5s off) | |

Notes: 1) The data shown above are initial values.

CHARACTERISTICS

| | | |
|--------------------------------|------------------------------|-------------------------|
| Insulation resistance | 1000MΩ (at 500VDC) | |
| Dielectric strength | Between coil & contacts | 5000VAC 1min |
| | Between open contacts | 1000VAC 1min |
| Operate time (at rated. volt.) | 8ms max. | |
| Release time (at rated. volt.) | 4ms max. | |
| Humidity | 5% to 85% RH | |
| Ambient temperature | -40°C to 85°C | |
| Shock resistance* | Functional | 98m/s ² |
| | Destructive | 980m/s ² |
| Vibration resistance* | NO | 10Hz to 55 Hz 1.65mm DA |
| | NC | 10Hz to 55 Hz 0.6mm DA |
| Termination | PCB | |
| Unit weight | Approx.4.6g | |
| Construction | Plastic sealed, Flux proofed | |

Notes: 1) *Index is not in relay length direction.

2) The data shown above are initial values.

3) Please find coil temperature curve in the characteristic curves below.

COIL

| | |
|------------|--|
| Coil power | Sensitive: Approx. 200mW; Standard: Approx. 450mW |
|------------|--|

COIL DATA

at 23°C

Standard type

| Nominal Voltage VDC | Pick-up Voltage VDC max. ¹⁾ | Drop-out Voltage VDC min. ¹⁾ | Max. Voltage VDC ²⁾ | Coil Resistance Ω |
|---------------------|--|---|--------------------------------|-------------------|
| 3 | 2.25 | 0.15 | 3.9 | 20 x (1±10%) |
| 5 | 3.75 | 0.25 | 6.5 | 55 x (1±10%) |
| 6 | 4.50 | 0.30 | 7.8 | 80 x (1±10%) |
| 9 | 6.75 | 0.45 | 11.7 | 180 x (1±10%) |
| 12 | 9.00 | 0.60 | 15.6 | 320 x (1±10%) |
| 18 | 13.5 | 0.90 | 23.4 | 720 x (1±10%) |
| 24 | 18.0 | 1.20 | 31.2 | 1280 x (1±10%) |
| 48 ²⁾ | 36.0 | 2.40 | 62.4 | 5120 x (1±10%) |

Sensitive type (Only for 1 Form A)

| Nominal Voltage VDC | Pick-up Voltage VDC max. ¹⁾ | Drop-out Voltage VDC min. ¹⁾ | Max. Voltage VDC ²⁾ | Coil Resistance Ω |
|---------------------|--|---|--------------------------------|-------------------|
| 3 | 2.25 | 0.15 | 5.1 | 45 x (1±10%) |
| 5 | 3.75 | 0.25 | 8.5 | 125 x (1±10%) |
| 6 | 4.50 | 0.30 | 10.2 | 180 x (1±10%) |
| 9 | 6.75 | 0.45 | 15.3 | 400 x (1±10%) |
| 12 | 9.00 | 0.60 | 20.4 | 720 x (1±10%) |
| 18 | 13.5 | 0.90 | 30.6 | 1600 x (1±10%) |
| 24 | 18.0 | 1.20 | 40.8 | 2800 x (1±10%) |

Notes: 1) The data shown above are initial values.

2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

3) For products with rated voltage ≥ 48V, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).

SAFETY APPROVAL RATINGS

| | | |
|--------|----------|---|
| UL/CUL | 1 Form A | 5A 250VAC 5A 30VDC 1/8HP 125VAC/250VAC TV-2 C300 |
| | 1 Form C | 3A 250VAC 3A 30VDC |
| VDE | | 5A 250VAC at 85°C 2A 250VAC cosφ=0.5 at 85°C 1 Form A, Sensitive: 3A 400VAC at 85°C |

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2019 Rev. 1.01

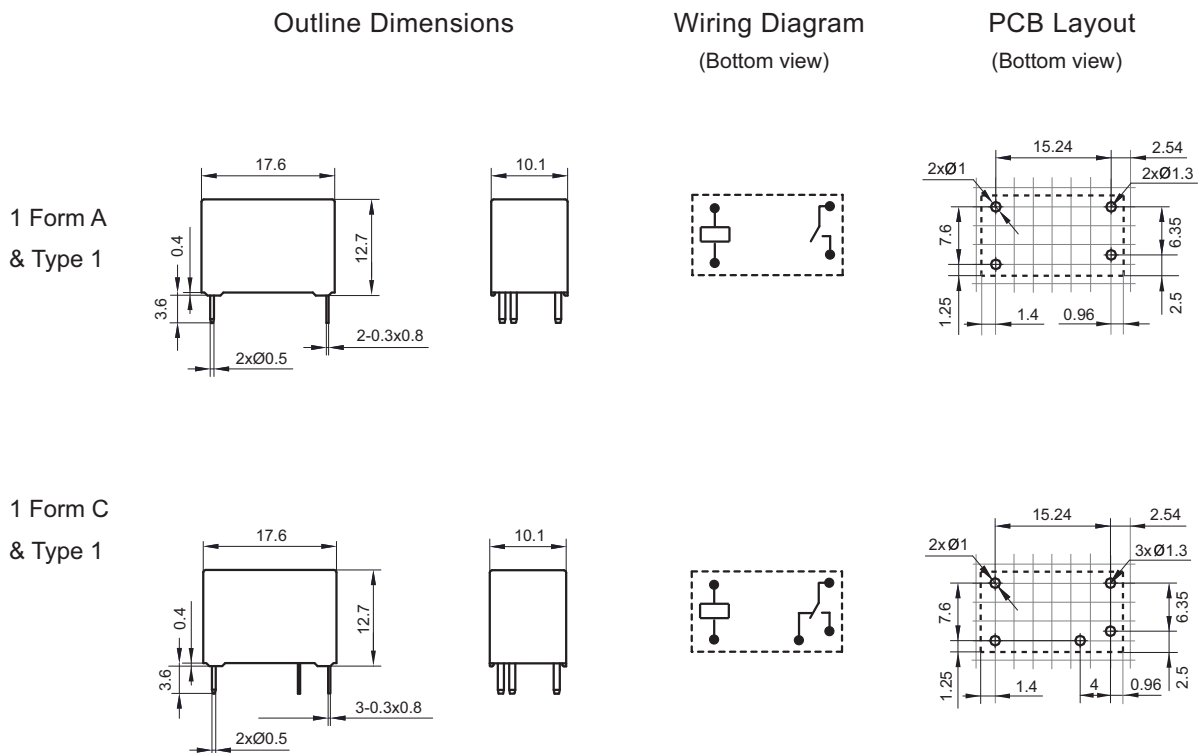
ORDERING INFORMATION

| | | |
|--------------------------------------|--|----------------------------|
| HF32FA / 012 -H S L 1 G (XXX) | | |
| Type | | |
| Coil voltage | 3, 5, 6, 9, 12, 18, 24, 48VDC | |
| Contact arrangement | H: 1 Form A | Z: 1 Form C |
| Construction¹⁾²⁾ | S: Plastic sealed | Nil: Flux proofed |
| Coil power | L: Sensitive (Only for 1 Form A) | Nil: Standard |
| Termination | 1: Type 1 | 2: Type 2 |
| Contact plating³⁾ | G: Gold plated | Nil: No gold plated |
| Special code⁴⁾ | XXX: Customer special requirement | Nil: Standard |

- Notes:** 1) We recommend flux proofed types for a clean environment (free from contaminations like H₂S, SO₂, NO₂, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H₂S, SO₂, NO₂, dust, etc).
- 2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
- 3) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.
- 4) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GWT).

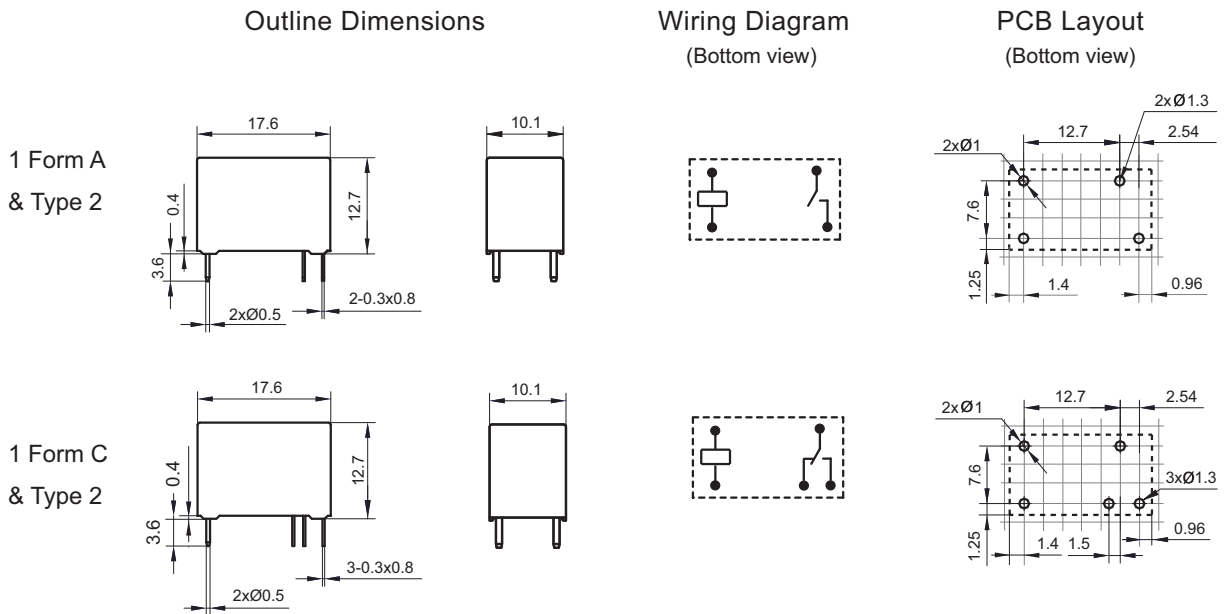
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



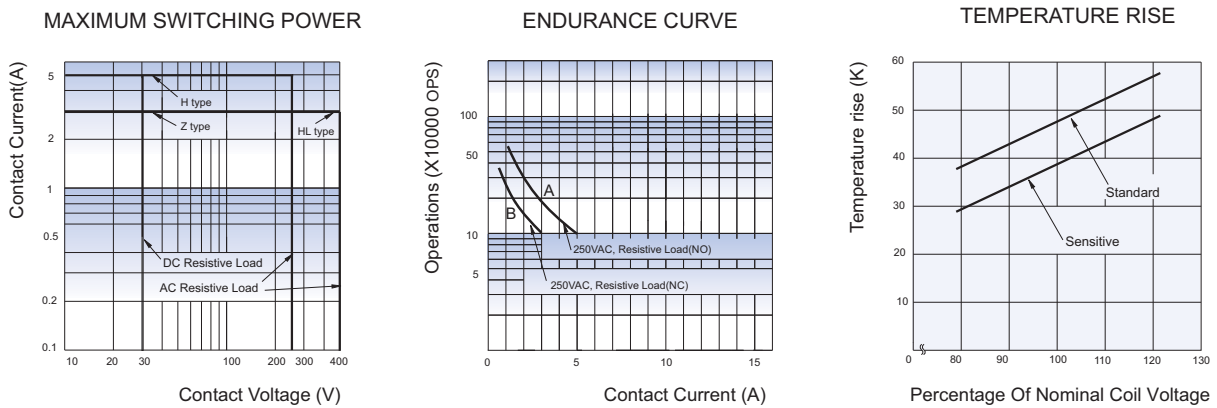
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
 2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.
 3) The width of the gridding is 2.54mm.

CHARACTERISTIC CURVES



Notes:

- Curve A: H type, Curve B: Z type
- Test conditions: Flux proofed, Room temp., 1.5s on 1.5s off.

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.